

COMPREHENSIVE DISCUSSION IN THE TREATMENT OF PARKINSONISM

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As we have been writing the new brochure on treatment of Parkinsonism with amino acids it became apparent that sometimes you cannot see the forest for the trees. What I mean by this is after working with amino acids in our practice virtually every day for the last 6 years the treatment of Parkinsonism seems very simple and straight forward, but from the perspective of those who have less experience the concept may seem more difficult to grasp. To this end I have written the following article on treatment of Parkinsonism with amino acids. The subject may turn you off if you do not think you are going to be treating patients with Parkinsonism, but as you read on the following strategies have implications for fine tuning all neurotransmitter dysfunction disease involving the serotonin and catecholamine systems.

The goal of treatment is to get the symptoms of Parkinsonism under control with the primary symptom being the “pill-rolling tremor” and the “cogwheel rigidity” that the Parkinson patient is suffering from. To do this the treatment strategy is straight forward, “Simply give enough L-dopa until the symptoms are controlled.” Do not be afraid of the L-dopa, we have seen end stage Parkinson patients who needed to achieve urinary dopamine levels from the L-dopa as high as 18,000. Simply give enough.

The problem with longer term L-dopa therapy is primarily two fold:

1. Unopposed L-dopa (i.e. L-dopa administered without the proper balance of serotonin precursors) leads to depletion of serotonin.
2. Administration of L-dopa leads to depletion of S-adenosylmethionine (SAME) the one carbon methyl donor for the whole body. SAME is involved directly in 42 major chemical reactions in the body. Most notably depletion of SAME causes depletion of epinephrine.

So the goal of treatment after establishing dopamine levels by way of administration of L-dopa that control the symptoms is to establish proper levels of serotonin and prevent SAME depletion. These two tasks can only be done optimally by using neurotransmitter testing to guide the clinical decision making. The following is a discussion on how to balance out the system.

THE D5 PROTOCOL

All patients need to take, “CysReplete 2 pills 3 times a day”.

Fine tuning neurotransmitter levels in the Parkinson patient and for that matter any patient where you want to put the patient’s neurotransmitter levels, “right on the money” is neurotransmitter testing intensive and is guided by neurotransmitters testing.

CASE STUDY

74 year old white male with 4 year history of Tremors diagnosed as Parkinsonism. Has been treated for the last 3 _ years with Sinemet and is currently taking 50/200 TID. In the last 6 months he has been experiencing

increased tremor to the point that he only fills glasses of liquids half full in order to avoid spilling. He is been experiencing poor sleep at night for the last 2 years and was diagnosed with depression approximately 18 months ago and started on Celexa (Citalopram) 20 mg. qd. When he was started on the Celexa he had good relief of the depression and his sleep improved marginally but as of the last 4 months the symptoms of depression have returned. He is suffering from, "lack of energy" that his doctor says goes with the bradykenesia of Parkinsonism.

Now the question becomes:

1. What is happening here?
2. What can we do to improve things clinically?

While we do not recommend neurotransmitter testing to establish a baseline before treatment due to confusion caused by hyperexcretion the following lab work was obtained prior to starting amino acid therapy with this patient.

1. Serotonin à 23
2. Dopamine à 2357
3. Norepinephrine à 45
4. Epinephrine à 0.7

Baseline urinary neurotransmitters labs prior to treatment are only of value if reported values are low. Even in cases where the neurotransmitters are low the correlations with systemic neurotransmitters levels are questionable at best. But none the less since low levels of neurotransmitters on lab reports in the patient prior to treat means that the patient is indeed low so we included this example.

The long term unopposed L-dopa treatment has left the patient depleted of serotonin and use of the highly serotonin selective SSRI Celexa proved effective until the last 4 months in treating the depression which was associated with the serotonin depletion. As of the last 4 months the efficacy of the Celexa has worn off. This was caused by further depletion of the serotonin by unopposed L-dopa and the Celexa itself.

Epinephrine levels are severely depleted as evidenced by the lab reports. Synthesis of epinephrine is dependant on 2 things functioning properly:

1. SAME
2. Cortisol

As L-dopa is administered on a long term basis SAME depletion occurs and the epinephrine levels drop markedly. Low levels of epinephrine (adrenaline) cause chronic susceptibility to fatigue and many other things.

Production of cortisol is controlled ultimately by norepinephrine. Once a patient is under treatment with proper balanced amino acids if the epinephrine levels are normal you can safely assume that the SAME and cortisol systems are functioning properly.

You do not need to get a neurotransmitter test on the patient, Simply stop the Sinemet and start the patient on step on of the D5 protocol and leave the patient on any meds they may be taking to control the symptoms of Parkinson therapy (these can be stopped later on after the patient has been stable for 2 to 4 weeks). see the patient back in one weekly. Considering the dosing of Sinemet that the patient was on when you see the patient back for the second visit the symptoms may be worse than before, not to worry simply increase the dosing to step 2 of the

protocol and see the patient back in one week. Patients need to be seen weekly no matter what you are treating with amino acid therapy until the problem you are treating has stabilized. At the third visit the patient show marginal improvement from last time. Increase the dosing to step 3 of the protocol and see back in one week. At the 4th visit the patient is marginally better, before going to step 4 of the protocol obtain a neurotransmitter testing and see the patient back in 8 or 9 days. The reason you probably want to see the patient back in 8 or 9 days is that you need to get the testing at 4 or 5 PM (or 5 to 6 hours before bed time) and will probably have to send the neurotransmitter kit home with the patient. Even though DBS guarantees a 7 days turn around time the patient might not get the test sample in the mail for a day or two.

At the next visit neurotransmitter levels are as follows:

1. Serotonin à 1895
2. Dopamine à 1644
3. Norepinephrine à 52
4. Epinephrine à 0.9

The key to what to do next lies with the serotonin and dopamine. It takes one week for the serotonin and dopamine to equilibrate after a dosing change. It takes 2 to 6 weeks for norepinephrine to equilibrate after a dose change, and it takes 3 to 6 months for the epinephrine to equilibrate after a dosing change.

The goal of treatment should be:

1. To have a serotonin level of 800 to 1,200.

A dopamine level as high as you need it to get symptoms under control.

The patient is on step 3 (8 D5 and 8 D5 Extra). The only way to decrease the serotonin is to decrease the 5-HTP, and the only way to do that is to decrease the D5 dosing to step 2.

THE FOLLOWING IS IMPORTANT. In regulating a clinical picture such as this it is a three step process with regards to adding, "D5 Mucuna" and lowering the D5 Extra.

1. Lower the D5 dosing from step 3 to step 2.
2. For every two pills of D5 or D5 Extra you decrease add one pill of "D5 Mucuna", In this case since you are decreasing the daily dosing by 4 pills of D5 Extra per day your would add 2 pills of D5 Mucuna per day. All that this step simply does is to lower the 5-HTP dosing and level the daily intake of L-dopa (D5 Mucuna) the same.
3. Final step is to add 3 additional pills of D5 Mucuna so the total increase in "D5 Mucuna" pills per day is five. The preferred method is to give 2 additional pills in the AM, one at noon, and two about 4 or 5 PM. You will now see the patient back in one week and get another neurotransmitter test. At the following visit patient is marginally better and the neurotransmitter testing shows:

1. Serotonin à 950
2. Dopamine 3,578
3. Norepinephrine à 51
4. Epinephrine à .0.9

What to do next? The serotonin is perfect, but the patient's symptoms are not under control, therefore the patient needs more L-dopa. But as you give more unopposed L-dopa the Serotonin levels also rise. At this point in time you opt for the following:

1. Cut back the daily dosing of D5 Extra by 2 pills and add one pill of D5 Mucuna at noon leaving the overall daily dosing of L-dopa intact.
2. Add three pills of D5 Mucuna spread out evenly throughout the day.
3. See the patient back and one week and get an neurotransmitter testing.

The patient's tremor is under control and the results of the neurotransmitter testing at the next visit are:

1. Serotonin à 850
2. Dopamine à 8,769
3. Norepinephrine à 57
4. Epinephrine à 1.1

At this point the patient is good and everything except the epinephrine levels are good. It can take the epinephrine levels 3 to 6 months (and occasionally more) to return to normal. So the patient goes home on:

1. 4 D5, 3 D5 Mucuna in the AM
2. 4 D5, 3 D5 Mucuna, 2 CysReplete at noon.
3. 4 D5, 3 D5 Mucuna, 2 CysReplete at 4 PM.
4. 2 CysReplete at bedtime

In looking at the overall dosing of Mucuna the patient is now on 710 mg of L-dopa per day but is now stable with virtually no tremor, no further depletion of serotonin or epinephrine and will probably be stable for a long time.

Follow up is to recheck neurotransmitter levels monthly in 3 months to help fine tune things and then every 6 months there after unless the patient starts to experience problems with the effectiveness of treatment.

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